GENERAL SERVICES ADMINISTRATION (GSA)

DEMONSTRATION AND VALIDATION OF VISUAL CLEANING PERFORMANCE INDICATOR TECHNOLOGY

Professional Engineering Services Program
Contract No.

Prepared by:

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1.0 INTRODUCTION.

1.1 Purpose.

This Statement Of Work (SOW) supports a field-level demonstration and validation of a Visual Cleaning Performance Indicator (VCPI) technology for verifying the cleanliness of large area surfaces on Air Force and Navy equipment. The subject technology will provide improved cleaning processes, reduced maintenance and logistic support costs associated with labor and materials, and an improvement in the performance of corrosion protection systems applied to DoD equipment.

1.2 Scope.

This study will concentrate on demonstrating and validating VCPI on the external surfaces of DoD assets. This validation exercise is necessary to not only refine the chemical and physical properties of VCPI for specific large area cleaning operations, but also assess the user friendliness of the process in a production environment.

1.3 Background.

Engineers at OO-ALC/EMC, AFRL/MLQ, NSWC-Carderock, and Battelle have identified and successfully tested in the lab a VCPI technology as a means to verify surface cleanliness on aluminum and steel alloys. The VCPI technology represents a significantly new, environmentally acceptable method of inspecting and validating the cleaning performance of commercial cleaners and/or corrosion removal compounds.

Traditional Air Force cleaning requirements and/or specifications for painted and unpainted surfaces are referenced in T.O. 1-1-691, and T.O. 1-1-8. In accordance with these documents, a simple, real-time water break test is used as the only measure of cleanliness during large surface cleaning operations. This process has its limitations due to (1) the nature and chemistry of specific contaminants on the surfaces of structures being cleaned, (2) skill level of production personnel using the technique, (3) lighting and visible access to the more heavily soiled areas, and (4) an inaccurate interpretation of water break results. In response to these limitations, and unscheduled adhesion failures of coatings, a need was identified for a more quantitative real time measure of cleaning efficiency. This need was addressed through a recently completed SERDP project that was funded to develop and demonstrate a cleaning verification tool that offers environmental, technical and economic advantages over current "production level" methods. This Environmental Security Technology Certification Program (ESTCP) project seeks to build on the previous SERDP efforts and a feasibility demonstration conducted at Hill AFB to demonstrate the effectiveness and versatility of VCPI,

as well as develop support for a suitable military specification and application procedures for these new test and inspection procedures.

2.0 GOVERNMENT CONTRACT AND PROGRAM MANAGEMENT.

2.1 Government Contract Management

2.1.1 Responsibility for contracting activities rests solely with the Government Contracting Officer. No conversation, recommendations, or direction, whether given directly by, or implied by government personnel, that will affect the scope, schedule, or price of the program covered by this SOW, shall be acted upon by the contractor unless specifically approved by the Government Contracting Officer.

2.2 Government Program Management

2.2.1 OO-ALC/EMC representatives will provide guidance and support on technical and contractual deliverables to the Contracting Office Technical Representative (COTR). The COTR will provide the contractor access to all technical data required to perform approved tasking. Only the COTR has authority to review and approve contract deliverables.

3.0 REFERENCE DOCUMENTS.

All relevant weapon system maintenance Technical Orders (TOs) and Process Orders (POs) will serve as reference documents. The VCPI technology validated through this SOW will be demonstrated on a single USAF, and a single Navy weapon system. Necessary documents shall be available for use by the contractor in the appropriate weapon system offices and/or maintenance repair facilities located at Hill AFB, Robins AFB, and the respective Naval Rework facilities participating in the subject demonstration.

4.0 CONTRACTOR TASKING/REQUIREMENTS.

All efforts requiring knowledge/access of a particular weapon system shall be coordinated through the appropriate System Program Manager (SPD) and COTR. ESTCP funding is presently available to accomplish required efforts. As required, the contractor shall provide engineering/technical and project management services for the efforts described below.

4.1 General Engineering.

4.1.1 Studies.

4.1.1.1 The contractor shall draft a Technology Demonstration-Validation Plan, based on the Joint-Services Test Protocol. This plan, will be prepared to communicate and guide all aspects of the proposed manufacture of VCPI-cleaners and field-testing. The contractor shall work with Air Force and Navy representatives to prepare this document as a means of establishing the objectives, test site activities, sampling and analysis requirements, data collection and analysis requirements, technical performance requirements, economic performance criteria, and quality assurance plans. The Dem/Val Plan will also address both general DoD and site-specific results.

4.1.1.2 The contractor shall conduct limited testing at their facility to establish the types and concentration of dye, delivery method, and dwell times for the VCPI-cleaner dyes investigated in support of the subject study. Testing shall take into consideration current production-based manpower and material requirements, compatibility between VCPI cleaner and substrates, cleaning requirements for existing systems, performance requirements for current corrosion protection systems, and environmental issues.

Using the appropriate VCPI-cleaners, a set of field trials shall be scheduled to address the specific needs of the Air Force and Navy for the inspection of aircraft, aircraft and ship parts, and equipment. This testing will be conducted at a single site designated by the Air Force (i.e., Hill AFB located in Ogden, UT or Robins AFB located in Warner Robins, GA), and at a single site designated by the Carderock Division of the Naval Surface Warfare Center (NSWCCD) located in West Bethesda, MD. All VCPI-cleaners will be manufactured in cooperation with the respective chemical companies responsible for formulating, manufacturing and distributing the QPL-approved cleaner materials to the DoD. All testing shall target developing cost data for specific facilities that can then be used to define overall maintenance facility savings associated with VCPI.

4.1.1.3 The contractor shall publish results obtained from the Air Force aircraft parts and Navy ship parts cleanliness verification tests, along with appropriate guidance, design, and/or protocols to assist in the full-scale testing and ultimate implementation of the VCPI technology in production environments. A draft MIL-SPEC or Process Order for VCPI inspection shall be prepared outlining the requirements for procurement and use of this inspection technique. The contractor shall also draft an executive-level cost and performance report to be used to encourage DoD and industry acceptance of VCPI, and solicit their feedback on the MIL-SPEC

and Process Order, as well as their perception of the usefulness of the technology. Potential benefits for using this cleanliness inspection tool will then be evaluated for multiple Air Force, Navy, Army, and private industry applications to maximize synergy within the DoD and industry.

4.1.1.4 The contractor shall work with Hill AFB to engage the appropriate Program Managers, Depot Managers, and regulatory community at the outset of the ESTCP project to seek their support and guidance for final user acceptance and implementation of the VCPI technology. The VCPI inspection technology has the potential to reduce adverse environmental effects now encountered with excessive releases of chemicals used to clean large structures. Communications with site environmental managers and risk management staff are anticipated to assure compliance with regulatory requirements.

4.2 Project Management.

4.2.1 The contractor shall provide all materials and services required to efficiently and effectively manage the tasks defined in the SOW. The contractor shall advise the COTR, in writing, of management problems requiring COTR action. The contractor shall prepare and submit a Program Schedule for review and approval by the COTR.

4.2.2 The contractor shall coordinate and participate in Project Management Reviews (PMRs) at the contractor's facility or other venues as directed by the COTR. All PMRs shall include Air Force and Navy representatives participating in the VCPI study.

4.2.3 Formal Reviews and Audits.

4.2,3.1. Project Reviews. The contractor shall conduct an Initial Project Kick-Off Meeting, as well as a Final Project Review (FRR).

5.0 DELIVERY SCHEDULE AND PERIOD OF PERFORMANCE.

5.1 Period of Performance.

5.1.1 The period of performance for this task shall be for eighteen (18) months ARO.

5.2 Delivery Schedule.

5.2.1 Task Platt/Schedule.
The contractor shall provide a detailed Joint Test Protocol (JTP) to the COTR NLT 30 days ARO. (CDRL A , DI-A-3007)

5.2.2 Status/Funding Reports.
The contractor shall prepare monthly status/funding reports. These reports shall contain a narrative description of the work accomplished during the previous month or specified period of performance. These reports shall list the cumulative funds expended and associated funding remaining on the contract as well as the funds expended during the respective period of performance by labor hour/category. The report shall document and identify any problems or issues that affect the successful completion of the task within the time and funding level provided. (CDRL A , DI-MGMT-80368)

5.3 Government Inspection and Acceptance of Deliverables.

The COTR will have the right to reject or require correction of any deficiencies found in deliverables. In the event of rejection of any deliverable, the contractor will be notified in writing by the COTR of the specific reasons why the deliverable was rejected. Unless otherwise specified, the Contractor shall have 5 workdays to correct the rejected deliverable and resubmit to the COTR for re-inspection. The US Government will deem the deliverable acceptable if no comments are provided to the contractor within 30 workdays of deliverable receipt.

6.0 SPECIAL CONSIDERATIONS.

6.1 Security.

6.1.1 This effort is not expected to require access to classified data. If such access is required, the COTR will coordinate this request with the appropriate SPD and security personnel from OO-ALC, WR-ALC or NADEP.

6.1.2 The COTR will assist contractor personnel in processing the necessary DoD forms to obtain base or area badges for access to government facilities.

6.1.3 The contractor shall coordinate with the COTR for any required visits of foreign nationals to US Government facilities. The COTR will be responsible for obtaining the appropriate entrance authority.

6.1.4 The contractor shall not divulge any information regarding files, data, processing activities/functions, user ID's, passwords, or other knowledge that may be gained, to anyone who is not authorized to have

access to such information. Contractor personnel shall abide by all government rules, procedures, and standard of conduct.

6.1.5 The contractor shall not release or remove system documentation, data, or reports generated by or through use of any government systems including system information or data used to develop SOW-related information. All requests for information shall be forwarded to the Government Program Manager (GPM).

6.2 Access to Facilities and Property

Access to government facilities is limited. Therefore, the contractor shall coordinate required access/usage times and dates through the GPM technical program manager at least ten days prior to the need date. The government program manager will coordinate with applicable sites to assist contractor personnel in processing the necessary information required for authorized access to designated units. Control of the facilities shall remain with the Government.

6.3 Government Furnished Equipment, Materials, and Software (GFE/GFM/GFS)

6.3.1 At the direction of the GPM and with appropriate supervision, the contractor is authorized to use designated aircraft for inspection and testing purposes. This may include retired and active aircraft. There is no other GFE, GFM, or GFS associated with this task.

6.3.2 All products developed under this contract shall be considered government property and shall have no license encumbrances.

6.4 Safety Requirements

6.4.1 General Safety Requirements

6.4.1.1 The contractor shall comply with all safety provisions, e.g., technical specifications, technical publications, Federal Occupational Safety and Health Standards (Title 29 CFR. Part 1910). If there is no applicable Occupational Safety and Health Administration (OSHA) standard, use other applicable nationally recognized sources of safety, health, and fire prevention standards referenced in the work requirements of this contract.

7.0 TRAVEL REQUIREMENTS

The contractor shall travel as directed by the COTR to attend meetings, develop information, and evaluate system requirements in support of the objectives of this SOW.

8.0 QUALITY REQUIREMENTS

Quality requirements of the basic contract apply.